

# CIVIL ENGINEERING TECHNICIAN

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**Program:** CVET

**Credential:** Ontario College Diploma, Co-op

**Delivery:** Full-time + Part-time

**Work Integrated Learning:** 1 Co-op Work Term

**Length:** 4 Semesters, plus 1 work term

**Duration:** 2 Years

**Effective:** Fall 2021

**Location:** Barrie

## Description

Students in this program prepare to work with engineers and construction project managers as part of a team constructing roads, bridges, sewers, water mains, and other infrastructure. Students determine data for cost estimation, perform materials testing, and assist in the administration of projects in the field. Teamwork and project-based learning are emphasized.

This program is common with the first four semesters of the Civil Engineering Technology program, and graduates may choose to continue into the third year of that program.

## Career Opportunities

Graduates may find work in the private sector assisting quantity surveyors (estimators), purchasers, site supervisors or project managers, drafters or detailers, using the latest in (CAD) technology. They may also find employment as assistants in engineering or construction offices. Public sector employment in a variety of government agencies, including municipal building inspection/code enforcement are employment options for graduates. A technician graduate would work with engineering and technologists in the gathering of data and information.

## Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. develop and use strategies to enhance professional growth and ongoing learning in the civil engineering field;
2. comply with workplace health and safety practices and procedures in accordance with current legislation and regulations;
3. complete duties and assist in monitoring that work is performed in compliance with contractual obligations, applicable laws, standards, bylaws, codes and ethical practices in the civil engineering field;
4. carry out sustainable practices in accordance with contract documents, industry standards and environmental legislative requirements;
5. collaborate with the project team and communicate effectively with project stakeholders to support civil engineering projects;
6. collect, process and interpret technical data to produce written and graphical project-related documents;
7. use industry-specific electronic and digital technologies to support civil engineering projects;
8. participate in the design and modeling phase of civil engineering projects by applying engineering concepts, basic technical

mathematics and principles of science to the review and production of project plans;

9. assist in the scheduling, cost estimation and monitoring of the progression of civil engineering projects by applying principles of construction project management;
10. perform quality control testing and the monitoring of equipment, materials and methods involved in the implementation and completion of civil engineering projects;
11. apply teamwork, leadership and interpersonal skills when working individually or within multidisciplinary teams to complete civil engineering projects.

## Practical Experience

All co-operative education programs at Georgian contain mandatory work term experiences aligned with program learning outcomes. Co-op work terms are designed to integrate academic learning with work experience, supporting the development of industry specific competencies and employability skills.

Georgian College holds membership with, and endeavours to follow, the co-operative education guidelines set out by the Co-operative Education and Work Integrated Learning Canada (CEWIL) and Education at Work Ontario (EWO) as supported by the Ministry of Colleges and Universities.

Co-op is facilitated as a supported, competitive job search process. Students are required to complete a Co-op and Career Preparation course scheduled prior to their first co-op work term. Students engage in an active co-op job search that includes applying to positions posted by Co-op Consultants, and personal networking. Co-op work terms are scheduled according to a formal sequence that alternates academic and co-op semesters as shown in the program progression below.

Programs may have additional requirements such as a valid driver's license, strong communication skills, industry specific certifications, and ability to travel. Under exceptional circumstances, a student may be unable to complete the program progression as shown below. Please refer to Georgian College Academic Regulation 3.2.7: *Changes in program, course, section or co-op*, for details.

International co-op work terms are supported and encouraged, when aligned with program requirements.

Further information on co-op services can be found at [www.GeorgianCollege.ca/co-op](http://www.georgiancollege.ca/co-op/) (<http://www.georgiancollege.ca/co-op/>)

## External Recognition

This program is accredited by the Canadian Association for Co-operative Education (CAFCE). This accreditation represents the highest standard of achievement for co-operative education programs in Canada, and recognizes Georgian's commitment to quality in co-op education.

## Program Progression

The following reflects the planned progression for full-time offerings of the program.

### Fall Intake

- **Sem 1:** Fall 2021
- **Sem 2:** Winter 2022
- **Work Term:** Summer 2022

- Sem 3: Fall 2022
- Sem 4: Winter 2023

## Articulation

A number of articulation agreements have been negotiated with universities and other institutions across Canada, North America and internationally. These agreements are assessed, revised and updated on a regular basis. Please contact the program co-ordinator for specific details if you are interested in pursuing such an option. Additional information can be found on our website at <http://www.georgiancollege.ca/admissions/credit-transfer/>

## Admission Requirements

OSSD or equivalent with

- Grade 12 English (C or U)
- Grade 12 Mathematics (C or U)

Mature students, non-secondary school applicants (19 years or older), and home school applicants may also be considered for admission. Eligibility may be met by applicants who have taken equivalent courses, upgrading, completed their GED, and equivalency testing. For complete details refer to: [www.georgiancollege.ca/admissions/academic-regulations/](http://www.georgiancollege.ca/admissions/academic-regulations/) (<http://www.georgiancollege.ca/admissions/academic-regulations/>)

Applicants who have taken courses from a recognized and accredited post-secondary institution and/or have relevant life/learning experience may also be considered for admission; refer to the Credit Transfer Centre website for details: [www.georgiancollege.ca/admissions/credit-transfer/](http://www.georgiancollege.ca/admissions/credit-transfer/) (<http://www.georgiancollege.ca/admissions/credit-transfer/>)

## Additional Information

Applicants are strongly recommended to have a minimum of their G2 license by the end of their 2nd semester for successful co-op placement.

A basic understanding of computer use for Word documents, emails, and accessing the internet is expected.

## Graduation Requirements

- 21 Program Courses
- 2 Communications Courses
- 3 General Education Courses
- 1 Co-op Work Term

## Graduation Eligibility

To graduate from this program, the passing weighted average for promotion through each semester, from year to year, and to graduate is 60%. Additionally, a student must attain a minimum of 50% or a letter grade of P (Pass) or S (Satisfactory) in each course in each semester unless otherwise stated on the course outline.

## Program Tracking

The following reflects the planned course sequence for full-time offerings of the Fall intake of the program. Where more than one intake is offered contact the program co-ordinator for the program tracking.

Semester 1		Hours
Program Courses		
CIVL 1002	Physics for Civil Engineering	42
COMP 1056	Civil Engineering Graphics	42
CONS 1003	Construction Practices	42
MATH 1028	Mathematics for Constructions	42
SURV 1001	Civil / Construction Surveying	42
Communications Course		
Select 1 course from the communications list during registration.		42
Hours		252

Semester 2		Hours
Program Courses		
CIVL 1001	Quantity Estimation and Drawing Review	42
COMP 1057	CAD / Civil Construction	42
CONS 1004	Construction Practices and Design: Material Testing	42
MENG 2003	Statics	42
SURV 1003	Civil/Construction Surveying 2	21
Communications Course		
Select 1 course from the communications list during registration.		42
General Education Course		
Select 1 course from the general education list during registration.		42
Hours		273

Semester 3		Hours
Program Courses		
CONS 2000	Construction Practices: Methods	42
CONS 2003	Construction Practices and Design: Municipal and Provincial Codes and Standards	42
MENG 2007	Strength of Materials	42
MGMT 2002	Project Management	42
SURV 2003	Introduction to GIS and Geospatial Technology	42
General Education Course		
Select 1 course from the general education list during registration.		42
Hours		252

Semester 4		Hours
Program Courses		
CIVL 2001	Geotechnical Analysis and Geosynthetics	42
CIVL 2002	Stormwater Management / Best Management Practices	21
COMP 2124	Introduction to 3D Drafting	42
CONS 2001	Construction Practices: Building Systems	42
CONS 2004	Construction Practices: Highways	42
CONS 2008	Site Development	42
General Education Course		
Select 1 course from the general education list during registration.		42
Hours		273
Total Hours		1050

Co-op Work Term		Hours
COOP 1028	Civil Engineering Work Term 1 (occurs after Semester 2)	560
Hours		560
Total Hours		560

## Graduation Window

Students unable to adhere to the program duration of two years (as stated above) may take a maximum of four years to complete their credential. After this time, students must be re-admitted into the program, and follow the curriculum in place at the time of re-admission.

**Disclaimer:** The information in this document is correct at the time of publication. Academic content of programs and courses is revised on an

*ongoing basis to ensure relevance to changing educational objectives and employment market needs.*

*Program outlines may be subject to change in response to emerging situations, in order to facilitate student achievement of the learning outcomes required for graduation. Components such as courses, progression, coop work terms, placements, internships and other requirements may be delivered differently than published.*